PUBLIC MEETING

Utah Committee of Consumer Services

September 22, 2015

Welcome & Business

2016 Legislative Session

Legislative Updates

- SB115: Rocky Mountain Power's STEP legislation
- Building Code related bills
- Net Metering related bills
- Interim Study

Case Updates

Case Updates

- PacifiCorp IRP Order
- Rocky Mountain Power Carrying Charges Order
- Recent Demand-Side Management Changes
- Clean Power Plan – stay issued by U.S. Supreme Court
- Thayn Hydro (Schedule 37 QF): Commission issued Provisional Conclusions of Law
- Carbon Emery UUSF Request – final briefing

Case Updates: Ongoing Work

- Merger between Dominion and Questar
- Transfer of facilities between Rocky Mountain Power and Navajo Tribal Utility Authority
- PacifiCorp Multi-State Process (MSP): Supporting testimony and hearing.
- PacifiCorp evaluation of joining an expanded California Independent System Operator

Upcoming Cases

- Rocky Mountain Power General Rate Case
- Questar General Rate Case
- Evaluation of Kennecott leaving the Rocky Mountain Power system

Recent Issues in the Press

Other Business

Adjourn

IRP slides from September

Comments filed by OCS

- Concern about level of Class 2 DSM (energy efficiency)
  - Utah accounts for 60% of DSM resources, but only 43% of system
  - Lack of detail by sector and end us of how this will be achieved
  - Recommend that the Company provide updates and more information on these issues
- Reliance on FOT
  - Power supply assessments indicate adequate reserves currently available
  - Recommend the Company monitor the market and provide annual updates
- Energy gateway Transmission Projects
  - 1300 miles of Gateway West and Gateway South
  - Recommend that in future IRPs the Company update the justification for these projects
- Capacity from QF Facilities
  - Over 1000 MW of wind and solar QFs are planned to be online in Utah by the end of 2016
  - These resources are acquired outside of the system wide planning process

Many Organizations Filed Comments

- Office of Consumer Services
- Division of Public Utilities
- Utah Association of Energy Users
- Utah Clean Energy and SWEEP
- Utah Physicians for a Healthy Environment
- Sierra Club, et. al. – HEAL Utah, Western Clean Energy Campaign, Powder River Basin Resource Council, Idaho Conservation League
- League of Women Voters
- Interwest Energy Alliance
- Matt Pacinza (HEAL Utah, et. al.)

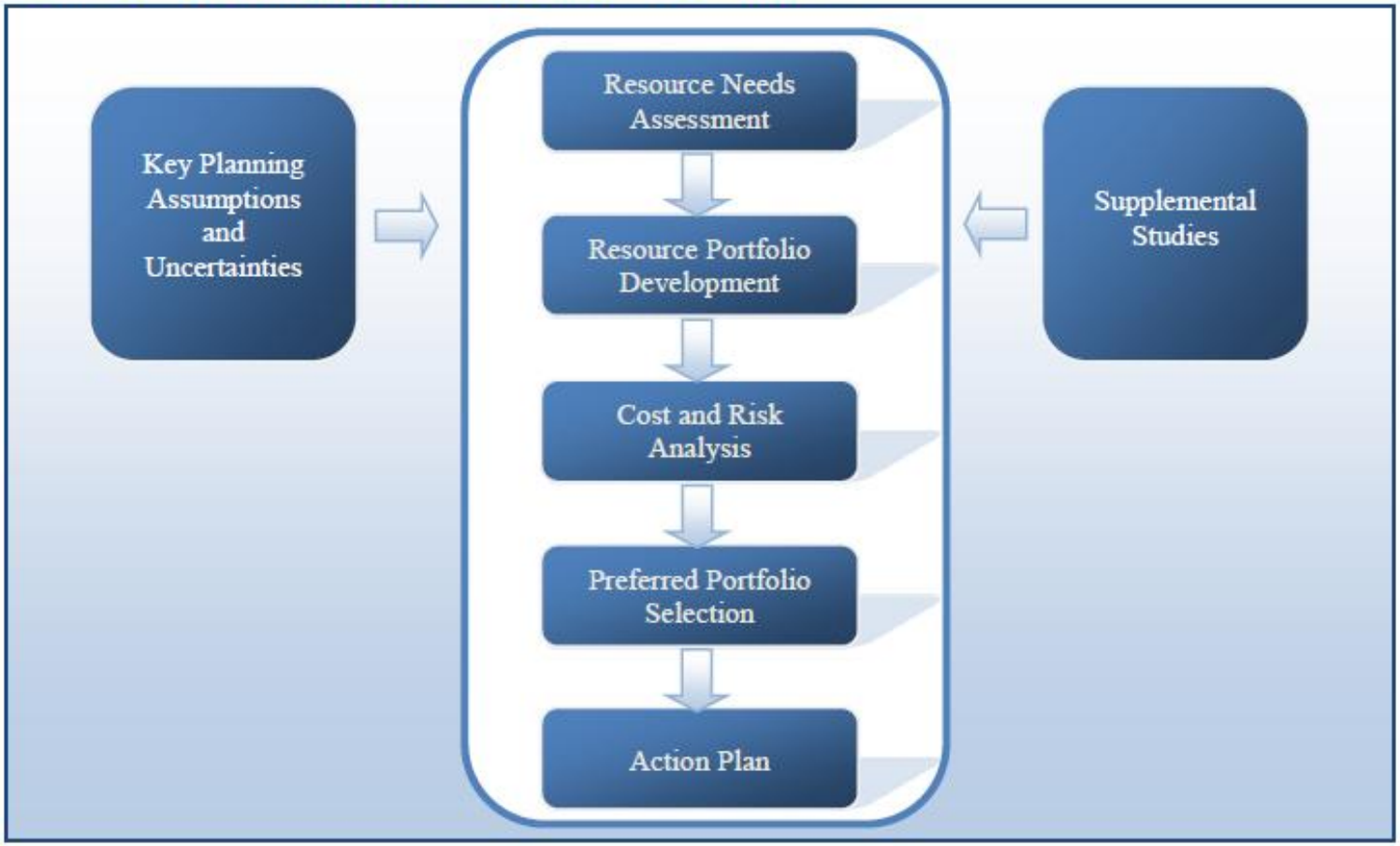
Related Initiatives

- Sierra Club
  - "PacifiCorp's 20-Year-Plan of Coal Dependence is Risky Business!"
  - Two different form letters submitted by hundreds of customers
- Heal Utah
  - "Brown Sky, The Truth About How Rocky Mountain Power Obstructs Renewable Energy"
  - Received little media attention
- Both initiatives provide a mix of factual and misleading information

IRP slides from April

Overview of Planning Process

Figure 1.1 – Key Elements of PacifiCorp's IRP Process



Preferred Portfolio

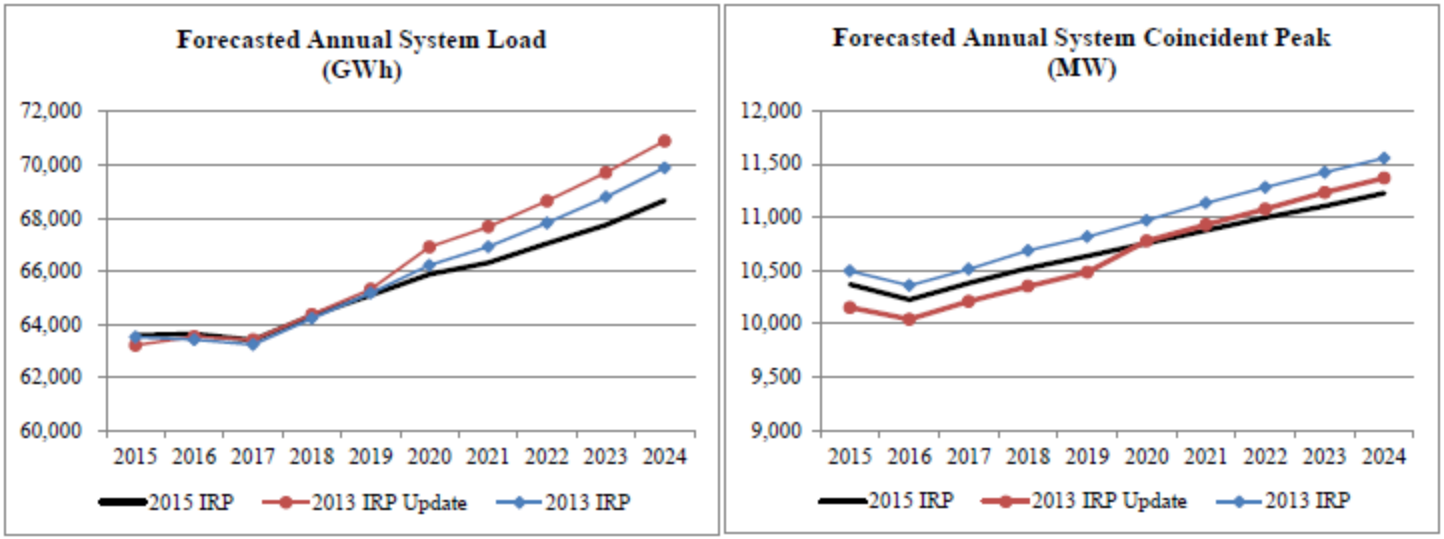
Table 1.1 – 2015 IRP Preferred Portfolio Summary (MW)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
New Resources																					
FOTs	727	937	904	870	935	979	769	791	761	754	771	792	835	1,304	1,167	1,253	1,247	1,411	1,360	1,087	n/a
DSM - Energy Efficiency	133	139	146	146	153	135	137	144	146	149	123	126	130	132	128	125	122	122	122	120	2,678
DSM - Load Control	0	0	0	0	0	0	0	5	11	0	0	11	0	0	11	0	0	0	5	0	42
Natural Gas Combined Cycle	0	0	0	0	0	0	0	0	0	0	0	0	0	423	0	1,159	0	0	635	635	2,852
OR Solar Capacity Standard	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Existing Unit Changes																					
Reduction in Owned Coal/Gas	(222)	0	0	(280)	0	0	0	0	0	0	(387)	0	0	(762)	0	(807)	(77)	0	(627)	0	(3,162)
Gas Conversion	0	0	0	337	0	0	0	0	0	0	387	0	0	0	0	(337)	0	0	0	0	387
Total Net Change in Resources	638	1,084	1,050	1,073	1,088	1,113	906	941	917	903	893	928	965	1,097	1,305	1,393	1,292	1,533	1,496	1,841	

- Resource needs can be met with DSM and low-cost short term firm market purchases (called front office transactions or FOTs on the chart)
- The next thermal resource is planned to be added in 2028, one year later than in previous plans
- By 2034 assumes that 1800 MW of existing coal generation will either be retired or converted to natural gas

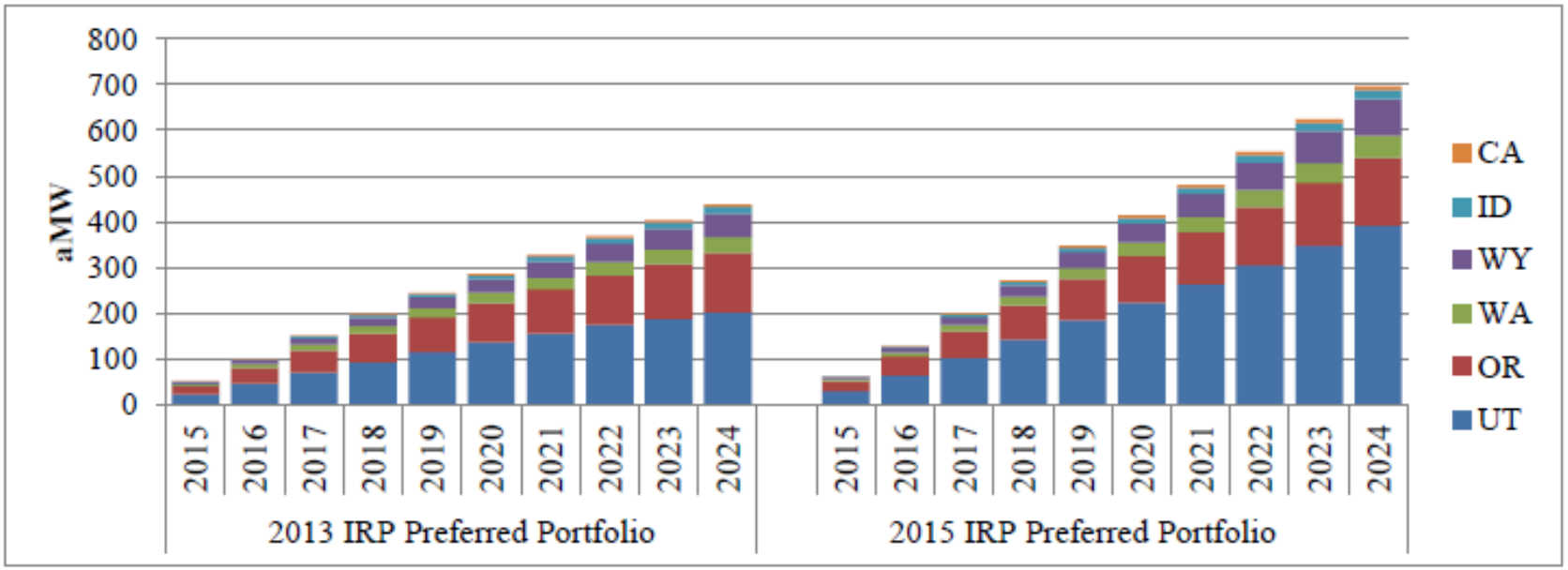
Load Forecast Changes

Figure 1.2 – Load Forecast Comparison among Recent IRPs



Energy Efficiency Changes

Figure 1.3 – Comparison of Total Energy Efficiency Savings between the 2015 IRP Preferred Portfolio and the 2013 IRP Preferred Portfolio



Action Plan

- Renewable Resource Actions
  - The Company will pursue unbundled REC RFPs to meet its state RPS compliance requirements
  - On a quarterly basis through 2016, issue reverse RFPs to sell vintage RECs not required to meet state RPS requirements
  - Conclude negotiations with shortlisted bids for qualifying solar to satisfy obligation under Oregon's 2020 solar capacity standard
- Front Office Transactions
  - Acquire economic short-term firm market purchases for on-peak summer deliveries from 2015 through 2017 consistent with Risk Management Policy and Front Office Procedures and Practices.
- Demand Side Management Actions
  - Pursue a west-side irrigation load control pilot beginning 2016 to test the feasibility of program design.
  - Acquire cost effective Class 2 DSM (energy efficiency) resources targeting annual system energy and capacity selections from the preferred portfolio.

Action Plan

- Coal Resource Actions
  - Naughton Unit 3: Issue an RFP to procure gas transportation and EPC contract for the natural gas conversion in the first quarter of 2016. (May include updated economic analysis of natural gas conversion)
  - Dave Johnston Unit 3: Requirement for SCR or shut-down by 2027 is under appeal. If upheld, will shut down by 2027. If modified, will evaluate alternative compliance strategies.
  - Wyodak: Continue to pursue appeal of SCR requirement. If upheld, evaluate alternative compliance strategies.
  - Cholla Unit 4: Continue permitting efforts in support of an alternative regional haze compliance that avoids SCR with a commitment to cease operating the unit as coal fueled by the end of April 2025.
- Transmission Transactions
  - Continue permitting for the Energy Gateway transmission plan

Process

- Schedule will be set for comments and reply comments
- Commission will acknowledge or not acknowledge the plan
- Typically, no hearing is held

IRP slides

Purpose of the IRP

- To select the optimal set of resources which will assure an adequate and reliable supply of electricity while balancing:
  - Cost
  - Risk
  - Public Policy Goals
- To provide long range resource planning to meet forecasted load – 20-year planning horizon

Utah Public Service Commission Guidelines

1. The Company will submit its IRP biennially for review and acknowledgment by the Commission.
2. The IRP will be developed using a public process and the Company will accommodate input from interested parties and facilitate information exchange.
3. The IRP will include:
    a. A range of estimates or forecasts of load growth
    b. An evaluation of all resources on a consistent and comparable basis
    c. An analysis of competitive bidding for all types of resource acquisitions
    d. A 20-year planning horizon
    e. An action plan to implement the IRP consistent with the business plan
    f. Different acquisition paths for different economic futures
    g. Evaluation of cost from the perspective of different ratepayers and social concerns

Commission Guidelines - Continued

3. The IRP will include (cont.):
   - h. An evaluation of risks whether the ratepayer or the stockholder bears the risk
   - i. Allow flexibility so that the Company can take advantage of opportunities
   - j. An analysis of tradeoffs
   - k. A range for external costs
   - l. A description of how rate design is consistent with IRP planning goals
4. The public and all interested parties will have the opportunity to submit formal comments to the Commission
5. The IRP will be used in rate cases to evaluate utility performance related to resource acquisition.
6. Acknowledgement of the IRP will not guarantee favorable rate treatment of resource acquisitions.

Forecast of Resource Needs

Key Assumptions:

- Forecasted loads
- Existing resource levels
- Reserve Requirements

New Resource Modeling Step 1 – Inputs & Assumptions

- Key Inputs – Resource cost estimates, asset lives, fuel cost inflation, asset lives, transmission topology, etc.
- Key Assumption Alternatives – Scenario/Case Development
  1. Compliance with proposed EPA 111(d) rule and CO2 costs
  2. Natural gas costs
  3. Wholesale electricity prices and availability of FOTs
  3. Load growth
  4. Renewable energy tax credits and integration costs
  5. Renewable Portfolio Standards
  6. Demand Side Management (DSM)
  7. Distributed Generation
  8. Coal plant regional haze compliance, coal plant retirements
  9. Energy Gateway transmission buildout

New Resource Modeling Step 2 – Capacity Expansion Model

- System Optimizer Model (PacifiCorp's CEM)
- Develop multiple cases using different combinations of assumptions
  - Core Cases - produces different portfolios to meet future needs
  - Sensitivity Cases – tests the impact of specific planning assumptions on resource selection, cost and risk
- System Optimizer solves for the least cost mix of resources for each case based on PVRR – Present Value of Revenue Requirement

New Resource Modeling Step 3 – Risk Analysis

- Planning and Risk Model (PaR) – Monte Carlo Simulation
- Risk Analysis – Testing the ability of a portfolio to respond to random and sometimes major changes in the following variables:

  (1) Loads
  (2) Natural gas prices
  (3) Wholesale electricity prices
  (4) Hydro energy availability
- This analysis screens the top-performing portfolios based on the combination of average risk and upper-tail risk*
  - Best performing core portfolios are selected for further screening.

*Upper-tail risk reflects potential outcomes that have a low probability of occurring but are very expensive if they do materialize.

Selection of Preferred Portfolio

The preferred portfolio was selected using the following criteria:

1. Risk-adjusted Mean PVRR
2. Customer rate impact
3. CO2 emissions
4. Energy Not Served
5. Fuel source diversity
6. Using RECs for Oregon RPS compliance

Office IRP Review

The Office thoroughly reviews the Company's IRP filings focusing on the following types of issues:

- Compliance with Commission Guidelines and past Commission IRP Orders
- Reasonableness of methods, inputs, assumptions and ultimately the preferred portfolio of resources selected by the Company
- Evaluation of selected issues by experts retained by the Office
- Re-visit issues that have been problems in past IRP filings (i.e. reliance on market power, appropriate planning reserve margins, treatment of renewable resources)